

FIG. 9. - INDICATOR LIGHT DATA - FLIGHT TEST MISSILE No. 1



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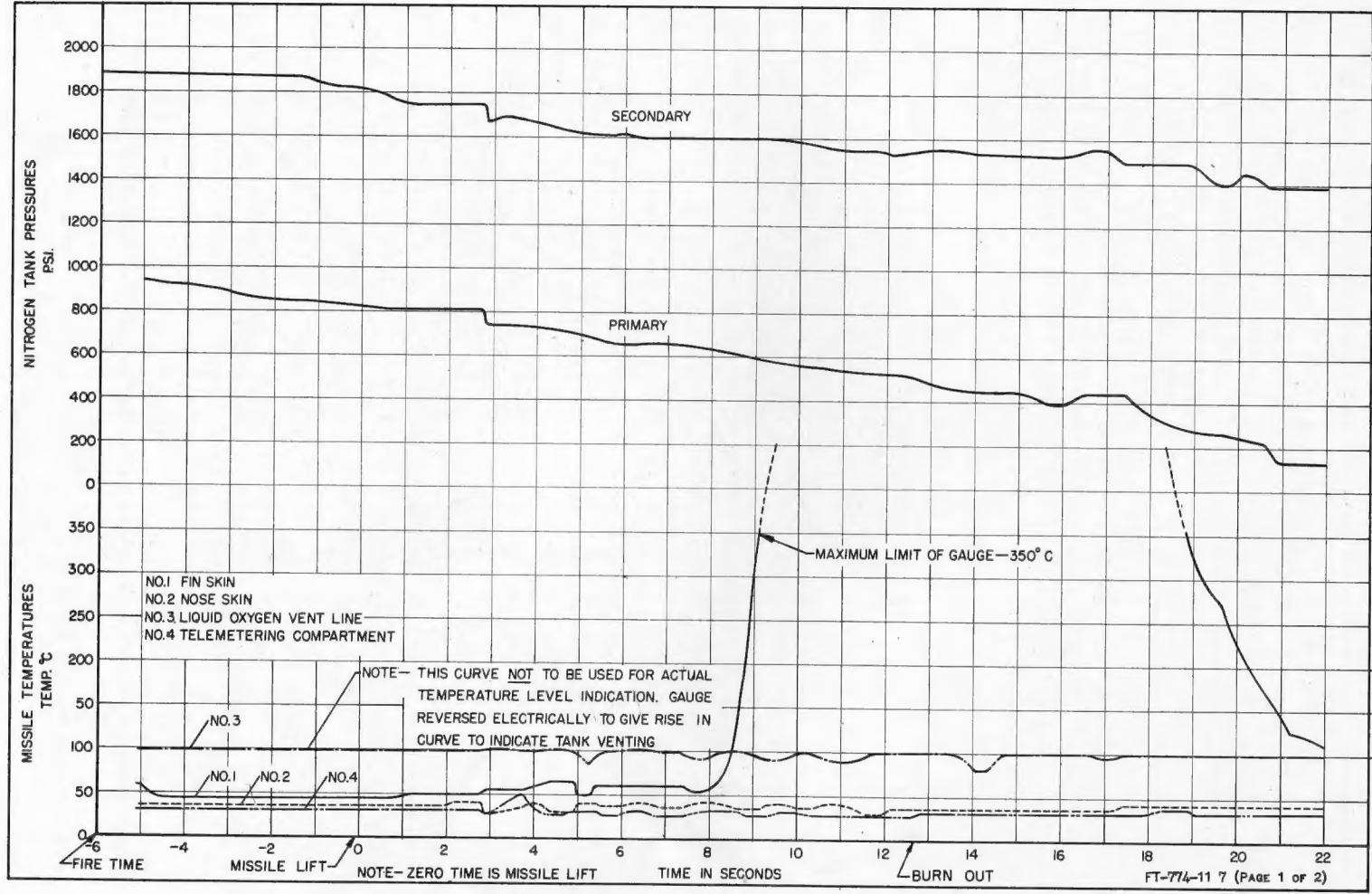


FIG. 10. - MX-774 OPERATING NITROGEN PRESSURES - FLIGHT TEST MISSILE No. 1

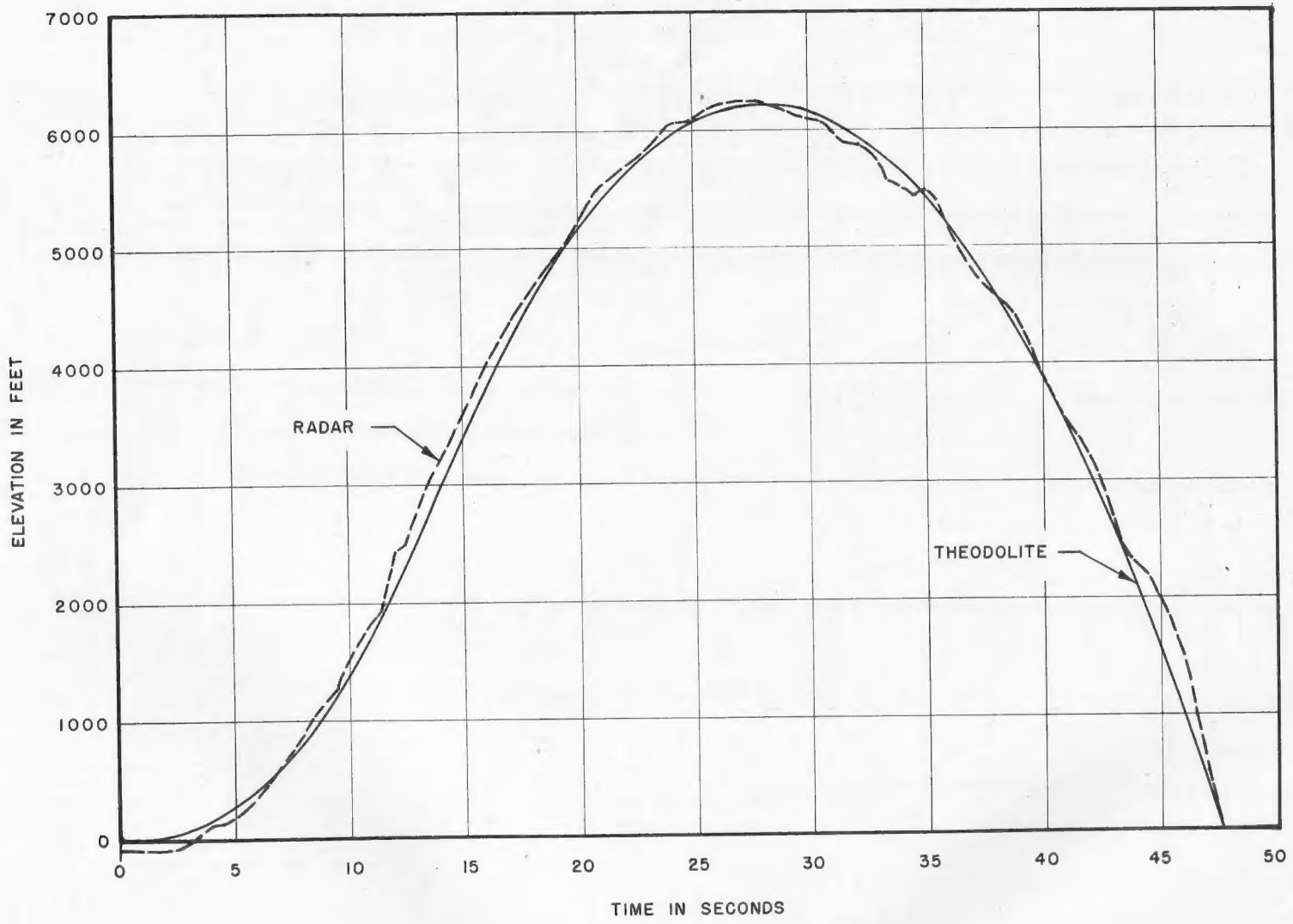


FIG. 11. - MX-774 ELEVATION DATA - FLIGHT TEST MISSILE No. 1



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STATIC TEST MX-774 NO. 2

A. GENERAL

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ENGR'G.
CONSOLIDATED VULTEE AIRCRAFT CO.
THE STATIC TEST FOR FLIGHT TEST MISSILE NO. 2 WAS CONDUCTED ON 30 AUGUST 1948 AT THE CONVAIR TEST FACILITY ON POINT LOMA.

B. PROPULSION SYSTEM RESULTS

THE OPERATION OF THE PROPULSION SYSTEM WAS SATISFACTORY. ENGINE OPERATION WAS NORMAL WITH THRUST RANGING FROM 7600 TO 8000 POUNDS. DURATION OF THE RUN FROM PRESSING FIRE BUTTON TO CUTOFF WAS 54.9 SECONDS.

C. STABILIZATION SYSTEM RESULTS

THE MISSILE WAS STABLE IN YAW AND ROLL THROUGHOUT THE PROGRAMMED RUN. IN PITCH, THE SYSTEM WAS UNSTABLE AT THE START OF THE PITCH PROGRAM AND THEN BECAME STABLE DURING THE LATTER PART OF THE RUN.

AN INVESTIGATION OF THE PITCH SYSTEM WAS MADE. TELEMETERING RECORDS SHOWED THAT THE SWIVELING SPEED WAS AS LOW AS 12 DEGREES PER SECOND INSTEAD OF THE 45 DEGREES PER SECOND DESIRED FOR GOOD STABILIZATION. AN INTERMITTENT (OPEN-CLOSED) CIRCUIT IN THREE OF THE CONTROL VALVE SOLENOIDS WAS DISCOVERED. CORROSION ON THE FINE WIRE AGGRAVATED BY HIGH VOLTAGE SURGES FROM THE INVERTER IS BELIEVED TO HAVE CAUSED THE TROUBLE. THE PITCH SYSTEM WAS CHECKED ON THE SIMULATOR USING A NEW VALVE AND OPERATED SATISFACTORILY. NEW COILS ARE BEING WOUND AND THE VALVE WILL BE RECHECKED BEFORE FLIGHT. A NEW INVERTER WILL ALSO BE INSTALLED.

D. TELEMETERING SYSTEM RESULTS

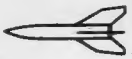
THE TELEMETERING EQUIPMENT OPERATED SATISFACTORILY. GOOD RECORDS WERE OBTAINED FROM ALL PICK-UPS DURING THE RUN WITH THE EXCEPTION OF PITCH VALVE POSITION. THIS PICK-UP SHIFTED CALIBRATION OFF THE RECORDER PAPER DUE TO SLIPPING OF THE POTENTIOMETER.

E. RADAR BEACON OPERATION RESULTS

THE OPERATION OF RADAR BEACON EQUIPMENT WAS UNSUCCESSFUL DURING THE RUN DUE TO FAILURE OF THE RELAY IN THE MISSILE TO OPERATE. THE CAUSE OF THIS FAILURE IN THE RADAR EQUIPMENT IS BEING INVESTIGATED.

F. COMMAND CONTROL EFFECTIVENESS

THE OPERATION OF COMMAND CONTROL EQUIPMENT WAS SUCCESSFUL IN ALL PHASES.



SECTION V

PROJECTED WORK PROGRAM

WORK TO BE INITIATED, CONTINUED OR COMPLETED DURING THE PERIOD 1 AUGUST THROUGH 31 OCTOBER 1948 INCLUDES:

1. REMOVE MX-774 FLIGHT TEST MISSILE No. 2 FROM STATIC TEST TOWER ON POINT LOMA, TRANSPORT TO CONVAIR EXPERIMENTAL SHOP FOR MISCELLANEOUS CLEANUP WORK, PAINTING AND PREPARE FOR TRANSPORT TO WHITE SANDS PROVING GROUND. SCHEDULED DATE FOR LEAVING SAN DIEGO: 8 SEPTEMBER. TRANSPORTATION AND SECURITY TO BE FURNISHED BY U. S. MARINE CORPS, CAMP PENDLETON, CALIF.
2. INSTALL MISSILE No. 2 ON LAUNCHING TABLE AT WHITE SANDS AND CONDUCT OPERATIONAL CHECKOUT OF ALL COMPONENTS INCLUDING BEACON FLIGHT AND PARACHUTE DROP TESTS.
3. CONDUCT FLIGHT TEST OF MISSILE No. 2 IN ACCORDANCE WITH FLIGHT TEST PROGRAM DATED 18 AUGUST 1948. APPROXIMATE FLIGHT DATE 27 SEPTEMBER 1948.
4. COMPLETE THE FABRICATION OF FLIGHT TEST MISSILE No. 3.
5. INSTALL STABILIZATION, TELEMETERING, DOPPLER AND PHOTO RECORDER EQUIPMENT IN TEST MISSILE No. 3.
6. COMPLETION OF CVAC REPORT No. ZN-6002-010 ENTITLED "INVESTIGATION OF LONG RANGE TRAJECTORIES PROJECT COMPLETION REPORT."
7. COMPLETION OF CVAC REPORT No. ZN-6002-019 ENTITLED "CVAC PRECISION RANGE SYSTEM."
8. COMPLETION OF CVAC REPORT No. ZN-6002-001 ENTITLED "DYNAMIC ANALYSIS OF STABILIZATION SYSTEM."

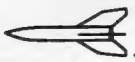


SECTION VI

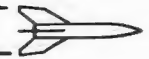
REFERENCE DATA



CVAC REP. NO.	TITLE	RELEASE DATE
275-805	POWER PLANT - OXYGEN TANK STATIC AND PRESSURE TEST OF	17 OCT 47
275-824	FIN - ARMY TEST VEHICLE - STATIC TEST OF	18 JUN 47
301-126	FUEL SYSTEM MX-774 SUPERSONIC TEST VEHICLE TESTS OF PRESSURIZATION BY VAPORIZATION OF LIQUID OXYGEN	5 DEC 47
346-16	STUDY OF PROPELLANTS OF HIGH SPECIFIC IMPULSE	25 SEP 46
346-17	CALCULATION OF SKIN TEMPERATURES OF THE SUPERSONIC TEST VEHICLE AND THE SUPERSONIC GROUND-TO-GROUND MISSILE	25 Nov 46
1496-1	MX-774 ACTIVITY REPORT	MAY 46
1496-2	MX-774 ACTIVITY REPORT	JUN 46
1496-3	MX-774 ACTIVITY REPORT	JUL 46
1496-4	MX-774 ACTIVITY REPORT	AUG 46
1496-5	MX-774 ACTIVITY REPORT	SEP 46
1496-6	MX-774 ACTIVITY REPORT	OCT 46
1496-7	MX-774 ACTIVITY REPORT	Nov 46
1496-8	MX-774 ACTIVITY REPORT	DEC 46
1496-9	MX-774 ACTIVITY REPORT	JAN 47



CVAC REP. NO.	TITLE	RELEASE DATE
1496-10	MX-774 ACTIVITY REPORT	MAR 47
1496-11	MX-774 ACTIVITY REPORT	APR 47
1496-12	MX-774 ACTIVITY REPORT	JUN 47
1496-13	MX-774 ACTIVITY REPORT	AUG 47
1496-14	MX-774 ACTIVITY REPORT	DEC 47
1496-15	MX-774 ACTIVITY REPORT	JAN 48
1496-16	MX-774 ACTIVITY REPORT	MAR 48
1496-17	MX-774 ACTIVITY REPORT	JUN 48
4002	PRELIMINARY ANALYSIS OF VIBRATING REED GYROSCOPE	21 JUN 46
4008	PROGRESS REPORT OF PRECISION GYROSCOPE	29 JUL 46
4009	POSITIVE ION ACCELEROMETER - ESTIMATES OF OUTPUT VOLTAGE AND REQUIRED XENON PRESSURE	13 AUG 46
4012	THE USE OF THE CYCLOTRON PRINCIPLE FOR INCREASING ACCELEROMETER TRANSIT	22 AUG 46
4013	MAGNETIC NAVIGATION INVESTIGATION	28 AUG 46
4014	MISSILE VELOCITY DETERMINATIONS FROM DOPPLER EFFECT	23 AUG 46
4016	THREE-GROUND-STATION RADAR NAVIGATIONAL SYSTEMS FOR A PROJECTILE-TYPE MISSILE	6 SEP 46
4018	IONOSPHERE REFRACTION ERROR ESTIMATE OF SIGHTING ERROR AND INCREASE IN PHASE VELOCITY	5 NOV 46
4019	INVESTIGATION OF MAXIMUM ERROR OF THREE - GROUND STATION NAVIGATIONAL SYSTEM	8 NOV 46
4024	PROPORTIONAL RADIO CONTROL	10 SEP 46
4025	TRANSMITTING ANTENNAS FOR VHF HYPERBOLIC GRID GUIDANCE CONTROL SYSTEM	15 OCT 46



CVAC REP.NO.	TITLE	RELEASE DATE
4032	SLAVE STATION RECEIVING ANTENNA FOR HYPERBOLIC GRID GUIDANCE SYSTEM	14 Nov 46
4036	ATMOSPHERIC REFRACTION ERROR ESTIMATE OF SIGHTING ERROR AND CHANGES IN PHASE VELOCITY	3 FEB 47
4038	A PRECISION MISSILE TRACKING SYSTEM	30 DEC 46
4039	STABILIZATION AND CONTROL SYSTEMS FOR MISSILE MX-774	31 DEC 46
4040	ANTENNA SYSTEM FOR VHF DOPPLER SPEED INDICATOR	3 JAN 47
4042	A STUDY OF WAVE PROPAGATION CHARACTERISTICS AS AFFECTING THE HYPERGRID NAVIGATION SYSTEM	2 JUL 47
4043	AIRBORNE RECEIVING ANTENNAS FOR VHF HYPERBOLIC GRID GUIDANCE SYSTEM	5 MAR 47
4044	A SIMPLIFIED CELESTIAL NAVIGATING INSTRUMENT	7 MAR 48
4045	AIRBORNE DOPPLER SPEED INDICATOR GROUND STATION ANTENNAS	17 MAR 47
4052	SELECTION OF GUIDANCE SYSTEM FOR MX-774 MISSILE	11 JUN 47
4054	LOW FREQUENCY, LONG RANGE NAVIGATION SYSTEM PROPOSAL	14 AUG 47
4055	VHF AIRBORNE ANTENNAS FOR ARMY TEST VEHICLE	3 JUL 47
5008	ROLL DAMPING TEST OF 1/8-SCALE MODEL MX-774 SINGLE STAGE SUPERSONIC TEST VEHICLE IN CVAC 4-FOOT WIND TUNNEL	27 JAN 47
5011	STRUCTURAL DESIGN CRITERIA SINGLE STAGE TEST VEHICLE	15 Nov 47



CVAC REP.NO.	TITLE	RELEASE DATE
5013	THREE COMPONENT SUBSONIC WIND TUNNEL TEST OF 1/8-SCALE MODEL OF MX-774 IN CVAC 4-FOOT WIND TUNNEL	14 FEB 47
5015	TAB HINGE MOMENTS OF 1/2-SCALE MODEL OF V-2 TYPE FIN FOR MX-774 IN CVAC 4-FOOT WIND TUNNEL	28 FEB 47
5019	THREE COMPONENT SUBSONIC WIND TUNNEL TESTS OF 1/8-SCALE MODEL MX-774	7 MAR 47
5029	PROJECT MX-774 STATUS TO 1 MAY 1947	2 MAY 47
5033	POWER PLANT MODEL TESTS - MX-774 TEST STAND	6 JUN 47
5034	TACTICAL MISSILE FUEL OXIDIZER LOCATION STUDY	
ZA-6002-001	PROPOSAL FOR AIR-LAUNCHED SOUNDING ROCKET	26 SEP 47
ZA-6002-002	FINAL AERODYNAMIC REPORT ON THE SINGLE STAGE TEST VEHICLE MX-774	
ZK-6002-001	REVIEW OF PRESSURIZATION SYSTEM SINGLE STAGE VEHICLE	30 JAN 48
ZM- 360	MAGNETIC GUIDANCE FOR LONG RANGE MISSILES	8 AUG 47
ZN- 001	A STUDY OF RANGE MEASUREMENT SYSTEMS	25 AUG 47
ZN-6002-003	TELEMETERING RECEIVING ANTENNA ARRAY FOR ARMY TEST VEHICLE	7 AUG 47
ZN-6002-005	IONIC ACCELEROMETER EXPERIMENTS	15 AUG 47
ZN-6002-006	AUTOMATIC MAGNETIC GUIDANCE	9 SEP 47
ZN-6002-007	GUIDANCE SYSTEM FOR THE MX-774 MISSILE	18 AUG 48
ZN-6002-008	HYPERGRID NAVIGATION SYSTEM	19 JAN 48
ZN-6002-009	HYPERGRID VHF TEST SYSTEM REPORT	16 DEC 47



CVAC REP. NO.	TITLE	RELEASE DATE
ZN-6002-011	ATMOSPHERIC REFRACTION ERRORS AND THEIR EFFECT UPON THE HITTING ACCURACY	30 SEP 48
ZN-6002-012	AUTOMATIC MAGNETIC NAVIGATION	21 OCT 47
ZN-6002-013	A PERIODIC COMPUTER FOR THE AUTOMATIC CONTROL PATH	20 OCT 47
ZN-6002-014	MISSILE ANTENNA DEVELOPMENT FOR PHASE COMPARISON POSITION TRACKING SYSTEM	6 Nov 47
ZN-6002-015	AUTOMATIC MAGNETIC GUIDANCE	28 OCT 47
ZN-6002-016	PRELIMINARY REPORT ON MX-774 TEST VEHICLE GUIDANCE SYSTEM	7 JAN 48
ZN-6002-017	PHASE COMPARISON ANGLE TRACKING SYSTEM	30 SEP 48
ZN-6002-018	DOPPLER SPEEDOMETER SYSTEM	2 MAR 48
ZN-6002-021	GUIDANCE SYSTEM COMPUTERS MX-774	14 JUN 48



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